Lockheed Martin Idaho Technologies Company

INTERDEPARTMENTAL COMMUNICATION

Date:

July 26, 1999

To:

D. J. Kuhns

MS 3920

6-8226

From:

T. E. Sizill

MS 3655

6-9273

Subject:

WAG 1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE - TES-06-99

Reference:

Transmittal to T. S. Green from T. E. Sivill, WAG OU 1-10 RI/FS Remedial

Alternatives, TES-3-97, dated September 8, 1997.

Cost Estimating has provided a Planning Cost Estimate for the project referenced above. Costs are summarized in a similar format to the RI/FS estimate for comparison purposes.

Costs are based on information and guidance provided by program personnel. The attached recapitulation sheet outlines the general scope information and identifies the major scope and cost deltas from the FS cost estimate referenced above. Costs have been presented in FY 99 dollars, escalated dollars and discounted to reflect a net present value for comparison purposes.

Should you have any questions, please contact Terry Sivill, ID-TES or 526-9273.

TES

Attachments

co.

B. J. Broomfield MS 3915

T. E. Sivill File

Estimate File 6950-4A

Lockheed Martin Idaho Technologies Company

COST ESTIMATE SUPPORT DATA RECAPITULATION

Project Title:

WAG 1 OU1-10 TSF 09/18 TANK SITE DRAFT ROD ESTIMATE

Estimator: Date:

TES/KLS 7-26-99

Estimate Type: PLANNING

File:

6950-4A

Approved By:

MUSOR

SCOPE OF WORK: Brief description of the proposed project. I.

Prepare a Rough Order of Magnitude Planning Cost Estimate for the above mentioned project. The estimate focuses on TAN WAG 1 - TSF-09/18 (V-Tanks), Alternative 2A3 Removal/Treatment Onsite and Offsite Disposal Options. This estimate provides an update to the RI/FS Cost Estimate, dated 9/8/97, and incorporates new scoping requirements provided to cost estimating the weeks of 6-17-99 thru 7-20-99.

II. BASIS OF THE ESTIMATE: Drawings, Design Report, Engineers Notes and/or other documentation upon which the estimate is originated.

The WAG 1 OU1-10 RI/FS REMEDIAL ALTERNATIVES Cost Estimate, dated 9-8-97.

Scoping and assumptions outline provided by the ER project engineer.

Coordination meeting with WAG 1 program management team and governing agencies.

III. ASSUMPTIONS: Conditions statements accepted or supposed true without proof of demonstration. An assumption has a direct impact on total estimated cost.

The general project assumptions and remedial action alternative general descriptions outlined in the RI/FS estimate still apply. Listed below are the specific assumptions addressing the scoping requirements as currently defined.

Total Capital Costs in current year dollars, (before contingency), reflects a net increase of \$220,758 (For Onsite Treatment) and \$3,452,395 (For Offsite Treatment). Listed below are the scope/cost deltas:

- 1. Program Management costs, (Same For Both Onsite/Offsite Options), remain the same as stated in the RI/FS.
- 2. Remedial Action (RA) Documentation, (Same For Both Onsite/Offsite Options), (RD/RA SOW and RA Work-plan), Remedial Action Reports, WAG initial 5 year review and RD documentation including the Health and Safety Plan, Sample and Analysis Plan and Pre-final Inspection Report have been revised. Costs are assumed similar to those utilized for the WAG-5 documentation. Costs reflect a net increase of \$219,000. Also included is an activity for initial 5 year review preparation and reviews at a cost of \$141,000.

COST ESTIMATE SUPPORT DATA RECAPITULATION

Continued –

Project Title: WAG 1 OU1-10 SITE V9/18 DRAFT ROD ESTIMATE

File:

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- 3. Remedial Design Activities: (Same For Both Onsite/Offsite Options)
- Initial Review of Deed Restrictions has been included as new scope. It is assumed with the new requirements for out-year (100 years) surveillance and monitoring a review of the current deed restrictions will need to be included. Costs are assumed similar to those utilized for the WAG-5 documentation. Costs reflect a net increase of \$32,000.
- The Title Design construction document package in the RI/FS estimate included design of site preparation, temporary utilities (Primarily electrical power), temporary lay-down and decontamination areas for the remediation subcontractor. The current estimate includes RI/FS estimate items plus the revised scope as listed below:
- Addition of Remedial Design Work Plan
- The design scope has not significantly changed, allowances were increased based on a percentage of the total capital cost.
- Costs reflect a net increase of \$97,340.
- 4. Remedial Action Construction Subcontract Activities:
- Site characterization scope includes additional soil/tank samples. Costs reflect a net increase of \$44,000.
- The construction/remedial action subcontract (For Onsite Treatment Option) includes: site-prep, shoring and piling, secondary containment, utilities, removal of contaminated soils, tank waste, tanks, and piping systems (within the shoring and piling footprint), treatment of tank waste at RWMC/Advanced Mixed Waste Treatment Facility and disposal at WIPP, disposal of soils and piping at the INTEC repository, and tank disposal at the CFA landfill.

 Costs reflect a net decrease of (\$133,404).
- The construction/remedial action subcontract (For Offsite Treatment Option) includes: site-prep, shoring and piling, secondary containment, utilities, removal of contaminated soils, tank waste, tanks, and piping systems (within the shoring and piling footprint), packaging of waste in high integrity containers, shipped by truck to an offsite treatment facility (assumed 1,200 miles round trip) and disposal at INEEL INTEC repository, disposal of soils and piping at the INTEC repository, and tank disposal at the CFA landfill.

Costs reflect a net increase of \$423,628.

- 5. Remedial Action The Project/Construction Management and RA Operations Oversight Activities:
- For the above mentioned construction and operations activities project/construction management and operations oversight costs reflect a net decrease of (-\$179,178) (For Onsite Treatment Option) and a net decrease of \$69,638 (For Offsite Treatment Option).

COST ESTIMATE SUPPORT DATA RECAPITULATION

Continued -

Project Title:

WAG 1 OU1-10 SITE V9/18 DRAFT ROD ESTIMATE

File:

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- 6. Operations assumes added scope including: (Same For Both Onsite/Offsite Options)
- Added Program Management for a 100 Year duration. Costs reflect a net increase of \$1,692,000.
- Added 5-year review for a 100 year duration (Previously referred to as Annual Operations and Maintenance Reports). Costs reflect a net increase of \$360,000.
- New caretaker/maintenance of the cap, fencing and monitoring wells for a 100 year duration. Costs reflect a net increase of \$186,250.
- Total Operations Cost in current year dollars, (without contingency), reflects a net increase of \$2,238,250.
- IV. <u>CONTINGENCY GUIDELINE IMPLEMENTATION</u>: The percentage used for contingency as determined by the contingency allowance guidelines can be altered to reflect the type of construction and conditions that may impact the total estimated cost.

Contingency (For Onsite Treatment Option) has been included at the same 30% as the RI/FS estimate. Due to the added scope and cost items the 30% factor on the Capital Dollars increased contingency by approximately \$66,227 and Operating Dollars increased by approximately \$671,475.

Contingency (For Offsite Treatment Option) has been included at the same 30% as the RI/FS estimate. Due to the added scope and cost items the 30% factor on the Capital Dollars increased contingency by approximately \$226,199 and Operating Dollars increased by approximately \$671,227.

V. OTHER COMMENTS/CONCERNS SPECIFIC TO THE ESTIMATE

The estimate has been prepared with less than 5% scope definition.

Lockheed I	Aartin Idaho Technologies Co.	SUMMARY COST ESTIN	MATE SHEET		•		
. Rev 10	-96					•	
Page 1	of 1						
Project	WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE		Type of Est.	Planning	•	Date	07/26/99
	WASTE SITE V-9/18 - REMOVAL, EX SITU OFFSITE THERMAL TREATMEN	τ				Prep'd By	TESAKLS
Location	TAN - INEEL		File No.	6950-4A	•	Checked By	185
Requeste	r D. J. KUHNS						77 100
				<u> </u>		· · ·	
	· _	ALTERNATIVE 2A3		ļ			
ACCT.		EXCAVATE/OFFSITE TREATMENT					
NO.	DESCRIPTION	DISPOSAL.					
						. <u>. </u>	
	CAPITAL COST SUBTOTAL	7,388,320				_	
	Contingency 9 30%	2,216,496		<u> </u>			
	TOTAL CAPITAL COST IN CURRENT YEAR DOLLARS	9,504,816					
	TOTAL CAPITAL COST IN ESCALATED DOLLARS	10,843,612		<u> </u>			
	TOTAL CAPITAL COST IN NET PRESENT VALUE	8,676,290					
<u> </u>	O&M COST SUBTOTAL	2,238,250		<u> </u>			
	Contingency ● 30%	671,475					
	TOTAL ORM COST IN CURRENT YEAR DOLLARS	2,909,725					
	TOTAL O&M COST IN ESCALATED DOLLARS	19,753,620	···· <u>-</u> ···				
ļ	TOTAL O&M COST IN NET PRESENT VALUE	1,090,942		·			
	TOTAL PROJECT COST IN CURRENT YEAR DOLLARS	12,514,541					
	TOTAL PROJECT COST IN ESCALATED DOLLARS	30,597,232					
	TOTAL PROJECT COST IN NET PRESENT VALUE	9,767,232					

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SUMMARY OF DETAILED COST ESTIMATE

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Project		WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE

Type of Est.

Planning

File No. 4951-4A

07/26/99 TES/KLS

WASTE SITE V-9/18 - REMOVAL, EX SITU OFFSITE THERMAL TREATMENT Location TAN - INEEL D. J. KUHNS Requester

•		ALTERNATIVE 2A3	
ACCT.		EXCAVATE/OFFSITE TREAT	
NO.	DESCRIPTION	DISPOSAL	
ER1220	FFA/CO Management and Oversight		
	Program Management	750,000	
	RA Document Preparation		
	RD/RA SOW	54,000	
	RA Workplan	000,E9	
	Packaging, Shipping, Trans. Documentation	48,000	
	Remediai Action Report	48,000	
	WAG-Wide RA - 5 Yr. Reviews	141,000	
	RD Documentation Preparation		
	Safety Analysis Documentation (ASA & HSP)	76,500	
	Sampling and Analysis Plan	54,000	
	Pre-Final Inspection Report	7,500	
ER1210	Remedial Design		
	Added Institutional Controls - 5 Yr. Reviews	32,000	
	Title Design Construction Document Package	182,300	
ER1230	Remedial Action - Construction Subcontract		
	Site Characterization	44,000	
	Construction Subcontract	4,797,933	
	Project/Construction Management	1,090,087	
·· · · · · · · · · · · · · · · ·	TOTAL CAPITAL COST	7,388,320	
ER1230	Remedial Action - Operations (100 Year Duration)	•	
	Program Management	1,692,000	
	WAG- 5 Yr. Review For 100 Years	360,000	
	Added Institutional Controls - 5 Yr. Review For 100 Years	NA NA	
	Continued/New Construction Caretaker/Maintenance	186,250	
	Operations, Maintenance, Materials, and Disposal	NA AN	
ER2000	D&D of Facilities	AA	
ER1310	Surveillance and Monitoring	NA NA	
	TOTAL OPERATIONS COST (100 YEARS)	2,238,250	

DETAILED COST ESTIMATE

Type of Est.

Lockheed Martin Idaho Technologies Co.

D. J. KUHNS

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Project

WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE

WASTE SITE V-9/18 - REMOVAL, EX SITU OFFSITE THERMAL TREATMENT
TAN - INEEL

PLANNING

ile No. 6950-4

ate

ACCT.	DESCRIPTION	E,V,	MAT'L	MAT'L UT.	UNIT LAB.	TOTAL	LABOR	LABOR	MATL	OTHER	TOTAL
NO.		P,H	UNIT	COST	HRS	LAB. HRS.	RATE	COST	COST	COST	COST
	FFA/CO Management and Oversight										
	Program Management										
	Coordination/Oversight of Technical Support		1 fte	-	640	640	75	48,000			48,000
	Coordination with Agency Participants		1 fte		320	320	75	24,000			24,000
	Cost and Schedule Control		1 fte		320	320	65	20,800	•		20,800
	Ensure Compliance of Gov't Regulation		1 fte		160	160	70	11,200			11,200
	Quarterly and Yearly Reviews		1 fte		160	160	65	10,400			10,400
	Audit Preparation and Coordination	i	1 fte		160	160	65	10,400			10,400
	Total Cost (Per Year)										124,800
	Total Cost (Per Year Rounded)										125,000
<u> </u>	Program Management - 3 Year Duration		6 yr	125,000					750,000		750,000
				1							
				<u> </u>							
						-					
	RA Document Preparation						<u> </u>				_
	RD/RA SOW					-					
	PreDesign Studies/Preliminary Scoping		3 fte		80	240	75	18,000			18,000
	Design Criteria		1 fte		40	40	75	3,000			3,000
	RD/RA Document Preparation		1 fte		80	80	75	6,000			6,000
	Reviews and Comment Resolution		1 fte		360	360	75	27,000		L	27,000
	RD/RA SOW Cost										54,000
		ŀ	•								
	RA Workplan										
	Preliminary Scoping		1 fte		160	160	75	12,000			12,000
	RD/RA Document Preparation		1 fte		260	260	75	19,500			19,500
	Reviews and Comment Resolution		1 fte		420	420	75	31,500			31,500
	RA Workplan Cost										63,000

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Project

WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE

WASTE SITE V-9/18 - REMOVAL, EX SITU OFFSITE THERMAL TREATMENT

ALTERNATIVE 2A3 - REMOVAL EX SITU THERMAL TREATMENT

Type of Est.

PLANNING

File No. 6950-4A

Date

ACCT.	DESCRIPTION	E,V,	MAT'L	MAT'L UT.	UNIT LAB.	TOTAL	LABOR	LABOR	MATL	OTHER	TOTAL
NO.		P,H	UNIT	COST	HAS	LAB. HRS.	RATE	COST	COST	COST	COST
·	RA Document Preparation (cont)										
	Packaging, Shipping, Transportation Documentation										
	Sampling and Analysis		1 fte		240	240	75	18,000			18,000
	Hazard Classification		1 fte		200	200	75	15,000		1	15,000
	Selection and Procurement of Packaging		1 fte		200	200	75	15,000		 	15,000
	Packaging, Shipping, Transportation Documentation Co	st						35,000		 	48,000
	Remedial Action Report										· · · · · · · · · · · · · · · · · · ·
	RA Report Preparation		1 fte		320	320	75	24,000			24,000
	Reviews and Comment Resolution		1 fte		320	320	75	24,000	_	 	24,000
	RA Report Cost										48,000
										† · · · · · ·	10,000
	WAG-Wide RA 5 Yr. Review - (Cost includes (1) FTE For	(1) yr for the	Initial Review							†	
	RA Report Preparation		1 yr		1,440	1,440	75	108,000		† · · · · · · · · · · · · · · · · · · ·	108,000
	Reviews and Comment Resolution		1 yr		440	440	75	33,000		<u> </u>	33,000
	WAG-Wide RA 5 Yr. Reviews For 100 Years									 	141,000
										1	141,000
	RD Document Preparation									1	
	Safety Analysis Documentation (ASA & HSP)					·				1	
	Auditable Safety Analysis/Hazards Classification		1 fte		180	160	75	12,000		 	12,000
	Unresolved Safety Questions		1 fte		160	160	75	12.000			12,000
	Quality Assurance		1 fte	1	30	30	75	2,250		 	2,250
	Reviews and Comment Resolution		2 fte	1	335	670	75	50,250		1	50.250
	Safety Analysis Documentation Cost							00,200		 	76,500
	Sampling and Analysis Plan			<u> </u>							
	Sampling and Analysis Plan					ļ				<u> </u>	
	Preliminary Scoping	 	0.5 fte		320	160	75	12,000			12,000
 	Fleld Sampling Plan Preparation		0.5 fte		400	200	75	15,000	·	ļ <u>.</u>	15,000
	Reviews and Comment Resolution		0.5 fte	 	720	360	75	27,000			27,000
	Sampling and Analysis Plan Cost								_		54,000

Lockheed Martin Idaho Technologies Co.

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Project

WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE

WASTE SITE V-9/18 - REMOVAL, EX SITU OFFSITE THERMAL TREATMENT

ALTERNATIVE 2A3 - REMOVAL EX SITU THERMAL TREATMENT

Type of Est.

PLANNING

File No. 6950-4A

Date

ACCT.	DESCRIPTION	E,V,	MAT'L	MAT'L UT.	UNIT LAB.	TOTAL	LABOR	LABOR	MATL	OTHER	TOTAL
NO.		P,H	UNIT	COST	HRS	LAB. HRS.	RATE	COST	COST	COST	COST
	RD Document Preparation (continued)										
	Pre-Final inspection Report										
	Checklist Preparation		1 fte		40	40	75	3,000			3,000
	Reviews and Comment Resolution		1 fte		60	60	75	4,500			4,500
	Pre-Final Inspection Report Cost										7,500
	Remedial Design		· · · · ·		·						
	initial Review of Deed Restrictions with Governing Bodies	and Public Co	mment								
	Legal Attorney and Env. Affairs at \$32K ea.		1 ea	32,000					32,000		32,000
 .	Deed Restrictions Cost										32,00
									<u></u>		
	Title Design Construction Document Package - For Constr	uction Subco	ntract								
	Remedial Design Workplan		1 fte		320	320	75	24,000			24,00
	Siting and Surveying		1 site		20	20	40	800			80
	Procurement Document Package		45 dwgs	3,500					157,500		157,50
	Total Title Design Package										182,30
	City Characteristics Instuding Course Collection Materials	intelligence Ch									
	Site Characterization - Including: Sample Collection Mater Assume 1 Sample Per 14 Drum Cask (1 Truckload)	alaycabor, Sit	20 smpls		Analysis Kep					(Materials)	
	resource i Sample Fel 14 Diulii Cask (1 (IUCKIO8U)		ZU SINDIS	1,500		120	75	9,000	30,000	5,000	44,00
								-			-
										-	· · · · · · · · · · · · · · · · · · ·
										 	

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Project

WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE

WASTE SITE V-9/18 - REMOVAL, EX SITU OFFSITE THERMAL TREATMENT

ALTERNATIVE 2A3 - REMOVAL EX SITU THERMAL TREATMENT

Type of Est.

PLANNING

File No. 6950-4A

Date

ACCT.	DESCRIPTION	E,V,	MAT"L	MAT'L UT.	UNIT LAB.	TOTAL	LABOR	LABOR	MATL	OTHER	TOTAL
NO.		P,H	UNIT	COST	HAS	LAB, HRS.	RATE	COST	COST	COST	COST
	Remedial Action - Construction Subcontract; Contaminated So	ils Exca	vation, Treatment,	and On-Site D	isposal						
	Mobilization to Site		1 crew		40	40	350	14,000			14,000
	Temporary Fence and Site Prep		1 crew		20	20	350	7,000			7,00
	Shoring and Pliing Around Tanks (25 if Deep)		260 lf	700					182,000		182,00
<u>-</u>	Secondary Containment		6,000 sf	90					540,000		540,00
	Temporary Utilities: Assume Electrical Power within 250'		1 ls	20,000					20,000		20,00
	Temporary Potable 4,000 Gal. Water Truck		4 mths	4,000					16,000	-	16,00
	Temporary Air Compressor (185 cfm Trailer Mtd)		4 mths	500					2,000		2.00
	Temp. Pads (polyliner,sand & gravel) 50' x 50'		2 sa	5,000					10,000	· · · · · · · · · · · · · · · · · · ·	10,00
	Tank Air/Water Jet Mixing Equipment Allowance		1 is	150,000					150,000	····	150.00
	Tank Vacuum/Drum Filling Equipment Allowance		1 is	250,000					250,000		250,00
	Machine Excavate Soils		1,400 cy		0.13	182	350	63,700	250,000	-	63,70
	Hand Excavation Around Tanks and Piping		100 cy		2	200	60	12,000			12.0
	Temporary Radiation Shielding Allowance		1 ls	50,000				12,000	50,000		
	Remove Waste From Tank To HIC's		10 HiC's		68.8	688	350	240,800	30,000		50,0
	Cleanout Tank interiors (Powerwash/Handwash)		2000 sf		0.05	100	350	35,000			240,8
	Cut Tank For Sizing and Disposal (320'/Tank)		960 H		0.5	480	350	168,000	······································		35,00
	Transport Tank Remains to CFA Landfill		8 trip		4	32	350	11,200		 -	168,0
	Remove Exist. Underground Piping System and Box	T	1 crew		80	80	350	28.000		 -	11,2
	Backfill and Compact with Native Soil and Revegetate		1500 cy		0.029	44	350	15.225			28,0
	Load/Transport of Soils/Pipe Boxes To Onsite Repository		150 Trips		4	600	110	66,000			15,2
	Purchase 1,200 Gallon HIC's for Tank Contents		10 HIC's	6,000		900		00,000	60,000		66,0
	Load/Prepare Waste HiC's For Transport Offsite	1	10 Trips	0,000	20	200	110	22,000	60,000	-	60,0
	Rental of Transport Casks		10 Casks	7,000	5,000	50,000	2.6	130,000	70,000		22,00
	Sludges/Liquids Offsite Treatment		41.65 cm	5.100	0,000	30,000	2.0	130,000	70,000 212,415		200,00
	Decon and Remove Rad, Shielding & Secondary Structure		1 crew	5,000	160	160	350	56,000			212,4
	Cut Shoring and Piling at Grade	1	260 H	150		. 100	330	30,000	5,000 39,000		61,00
	Site Cleanup and Demob.	1	1 Is	2.000	30	30	350	10,500			39,00
	Total Subcontractor Directs			2,000	- 00	- 30	350	10,500	2,000		12,50
	Subcontractor Overhead and Profit @ 30%										2,487,84
	Total Subcontractor Directs and Indirects			<u> </u>							746,35
	Procurement Fees and G&A at Current Business Practices						 				3,234,19
	Total Subcontractor Costs	T									1,164,30 4,398,50

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Project

WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE

WASTE SITE V-9/18 - REMOVAL, EX SITU OFFSITE THERMAL TREATMENT

ALTERNATIVE 2A3 - REMOVAL EX SITU THERMAL TREATMENT

Type of Est.

PLANNING

ile No. 6950-4A

ate

ACCT.	DESCRIPTION	E,V,	MAT'L	MAT'L UT.	UNIT LAB.	TOTAL	LABOR	LABOR	MAT'L	OTHER	TOTAL
NO.		P,H	UNIT	COST	HRS	LAB. HRS.	RATE	COST	COST	COST	COST
	Remedial Action - Construction Subcontract; Contaminated S	oils Excay	ration, Treatment,	and On-Site D	isposal						
	PPE's Required for Project (5fte crew @ 1 per day/60 Days)		300 ea	40					12,000		12,00
	LMITCO Jobsite Support Personnel		4 ea		640	2,560	65	166,400			166,40
	LMITCO Job Walkdown and Closeout		4 fte		40	160	70	11,200			11,20
	Road Closure and Off Hours Security and Signage		i Is	10,000					10,000		10,00
	Misc. Consumable Materials: Fuel, Power, Tools, etc.		1 ls	10,000					10,000		10,0
	4x4x8 Waste Boxes For Waste Piping		25 boxes	650					16,250		16,2
	Transport Treated Waste Back To INEEL (\$3.25/mi.x1200ml.)		4 trips	3,900					15,600		15,6
	Dispose of Treated Waste at INEEL Repository		19 cy	104					1,982		1,9
	Onsite Soil Repository Disposal Cost		1,500 cy	104					156,000		156,0
	Total Cost										399,4
		_									
											···-
	Project/Construction Management; Contaminated Soils Excav	ation, Tre	atment, and On-S	ite Disposal		,		·			1,090,0
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Project

WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE

WASTE SITE V-9/18 - REMOVAL, EX SITU OFFSITE THERMAL TREATMENT

ALTERNATIVE 2A3 - REMOVAL EX SITU THERMAL TREATMENT

Type of Est.

PLANNING

File No. 6950-4A

Da

ACCT.	DESCRIPTION	E,V,	MAT'L	MAT'L UT.	UNIT LAB.	TOTAL	LABOR	LABOR	MATL	OTHER	TOTAL
NO.		P.H	UNIT	COST	HAS	LAB, HRS.	RATE	COST	COST	COST	COST
	Remedial Action - Operations (100 Year Duration)			1				Ī			-
	Program Management										
	Coordination/Oversight of Technical Support		0.5 fte		200	100	75	7,500			7,500
	Coordination with Agency Participants		0.5 fte		80	40	75	3,000			3,000
	Cost and Schedule Control		0.5 fte		59	30	65	1,924			1,924
	Ensure Compliance of Gov't Regulation		0.5 fte		32	16	70	1,120			1,120
	Reviews		0.5 fte		32	16	65	1,040			1,040
	Audit Preparation and Coordination		0.5 fte		32	. 16	65	1,040			1,040
	Annual Operations and Maintenance Reports		0.5 fte		40	20	65	1,300			1,300
	Total Cost (Per Year)					238				· · · · · · · · · · · · · · · · · · ·	16,920
	Program Management Costs - 100 Year Duration		100 yrs	16,920					1,692,000		1,692,000
	WAG-Wide RA 5 Yr. Review - (Cost Per Each, (1) FTE	n (5) Yr. Incren	ents)						 		
	RA Report Preparation		20 yrs		160	3,200	75	240,000			240.00
	Reviews and Comment Resolution		20 yrs		80	1,600	75	120,000			120,00
,	WAG-Wide RA 5 Yr. Reviews For 100 Years			Ť							360,00
				T							· · · · · · · · · · · · · · · · · · ·
				T							
	Remedial Design										
	Added Institutional Controls - 5 Yr. Review of Deed Restr	ictions with Go	verning Bodies	and Public Com	ment Over a	00 Year Perio	d; Total of 19	Reviews.			
	Legal Attorney and Env. Affairs at \$32K ea.						i i			[NA.
	Total Added Institutional Controls - 100 Year Duration										NA NA
							•				10-3
											
						-					
											

Lockheed Martin Idaho Technologies Co.

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Project

WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE

WASTE SITE V-9/18 - REMOVAL, EX SITU OFFSITE THERMAL TREATMENT

ALTERNATIVE 2A3 - REMOVAL EX SITU THERMAL TREATMENT

Type of Est.

PLANNING

File No. 6950-4A

te ____ 07/26/99

ACCT.	DESCRIPTION	E,V,	MAT'L	MAT'L UT.	UNIT LAB.	TOTAL	LABOR	LABOR	MATL	OTHER	TOTAL
NO.		P,H	UNIT	COST	HRS	LAB. HRS.	RATE	совт	COST	COST	COST
	Caretaker/Maintenance									- 0001	
	Caretaker (2 Trips Per Year)		0.0125 fte		1,880	24	75	1,763			1,76
	Cap Maintenance										1,70
	Area/Access Materials and Repair		1 yr	100					100		10
	Caretaker/Maintenance Cost Per Year										1,86
	Caretaker Cost - 100 Year Duration		100 yrs	1,863					186,250		186,25
			· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·							
	Operations, Maintenance, Materials and Disposal	1		·			<u> </u>				NA
							·				
		~	·	 							
		- 									
	D&D of Facilities			·							
		·									NA NA
	Surveillance and Monitoring										NA
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Lockheed	Martin Idaho Technologies Co.	SUMMARY COST ESTIN	MATE SHEET				
Rev 10	9 -96						
Page 1	of 1						
Project	WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE		Type of Est.	Planning		Date	07/26/99
	WASTE SITE V-9/18 - REMOVAL, EX SITU ONSITE THERMAL TREATMENT				-	Prep'd By	TESKLS
Location	TAN - INEEL	•	File No.	6950-4A		Checked By	000
Requeste	D. J. KUHNS				-	•	
ļ							
	<u> </u>	ALTERNATIVE 2A3					
ACCT.		EXCAVATE/ONSITE TREAT					
NO.	DESCRIPTION	DISPOSAL					ĺ
	CAPITAL COST SUBTOTAL	6,721,370	····				
ļ	Contingency @ 30%	2,016,411	··				
ļ	TOTAL CAPITAL COST IN CURRENT YEAR DOLLARS	8,737,781					
<u> </u>	TOTAL CAPITAL COST IN ESCALATED DOLLARS	9,698,525					
	TOTAL CAPITAL COST IN NET PRESENT VALUE	7,770,734					
ļ	O&M COST SUBTOTAL	2,238,250				1.5	
	Contingency 9 30%	671,475					
ļ	TOTAL OBM COST IN CURRENT YEAR DOLLARS	2,909,725					
<u> </u>	TOTAL O&M COST IN ESCALATED DOLLARS	19,753,620					
ļ	TOTAL OAM COST IN NET PRESENT VALUE	1,090,942					
 							
			,,, ., ,				
	TOTAL PROJECT COST IN CURRENT YEAR DOLLARS	8,737,781					
<u> </u>	TOTAL PROJECT COST IN ESCALATED DOLLARS	29,452,145					
<u> </u>	TOTAL PROJECT COST IN NET PRESENT VALUE	8,861,676		<u>i_,</u>			

Lockheed Martin Idaho Technologies Co.

SUMMARY OF DETAILED COST ESTIMATE

Rev 10-96

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Project WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE

Type of Est.

Planning

File No. 6950-4A

07/26/99

TES/KLS

 Location
 TAN - INEEL

 Requester
 D. J. KUHNS

WASTE SITE V-9/18 - REMOVAL, EX SITU ONSITE THERMAL TREATMENT

		ALTERNATIVE 2A3	
ACCT.		EXCAVATE/TREAT	
NO.	DESCRIPTION	ONSITE DISPOSAL	
···			
ER1220	FFA/CO Management and Oversight		
	Program Management	750,000	,
	RA Document Preparation		· · · · · · · · · · · · · · · · · · ·
	RD/RA SOW •	54,000	
	RA Workplan	63,000	
· .	Packaging, Shipping, Trans. Documentation	48,000	
	Remedial Action Report	48,000	
	WAG-Wide RA - 5 Yr. Reviews	141,000	
	RD Documentation Preparation		
	Safety Analysis Documentation (ASA & HSP)	76,500	
	Sampling and Analysis Plan	54,000	
	Pre-Final Inspection Report	7,500	
ER1210	Remediai Design		
	Added Institutional Controls - 5 Yr. Reviews	32,000	
	Title Design Construction Document Package	182,300	
ER1230	Remedial Action - Construction Subcontract		
	Site Characterization	44,000	
	Construction Subcontract	4,240,591	
	Project/Construction Management	980,479	
	TOTAL CAPITAL COST	6,721,370	
ER1230	Remedial Action - Operations (100 Year Duration)		
	Program Management	1 800 000	
	WAG-Wide RA - 5 Yr. Review For 100 Years	1,692,000	
	Added Institutional Controls - 5 Yr, Review For 100 Years		
-	Continued/New Construction Caretaker/Maintenance	NA 198 250	
·· ·	Operations, Maintenance, Materials, and Disposal	186,250	
ER2000	D&D of Facilities	NA NA	· · · · · · · · · · · · · · · · · · ·
ER1310	Surveillance and Monitoring	NA NA	
	TOTAL OPERATIONS COST (100 YEARS)	2,238,250	

DETAILED COST ESTIMATE

Lockheed Martin Idaho Technologies Co.

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Project

WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE

WASTE SITE V-9/18 - REMOVAL, EX SITU ONSITE THERMAL TREATMENT

TAN - INEEL

D. J. KUHNS

Type of Est. PLANNING File No. 6950-4A Date 07/26/99

ACCT.	DESCRIPTION	E,V,	MAT'L	MAT'L UT.	UNIT LAB.	TOTAL	LABOR	LABOR	MAT'L	OTHER	TOTAL
NO.		P,H	UNIT	COST	HRS	LAB, HAS.	RATE	COST	COST	COST	COST
	FFA/CO Management and Oversight										
	Program Management										
	Coordination/Oversight of Technical Support		1 fte		640	640	75	48,000			48,000
	Coordination with Agency Participants		1 fte		320	320	75	24,000			24,000
	Cost and Schedule Control		1 fte		320	320	65	20,800			20,800
	Ensure Compliance of Gov't Regulation		1 fte		160	160	70	11,200			11,200
	Quarterly and Yearly Reviews		1 fte		160	160	65	10,400			10,400
	Audit Preparation and Coordination		1 fte		160	160	65	10,400			10,400
	Total Cost (Per Year)				-						124,800
	Total Cost (Per Year Rounded)										125,000
	Program Management - 3 Year Duration		6 yr	125,000					750,000		750,000
											1,5,5,5,5,5
						· · · · · · · · · · · · · · · · · · ·				- 	
										-	
			•••								
	RA Document Preparation										
	RD/RA SOW								<u> </u>		
	PreDesign Studies/Preliminary Scoping		3 fte		80	240	75	18,000		-	18,000
	Design Criteria		1 fte		40	40	75	3,000	·		3,000
	RD/RA Document Preparation		1 fte		80	80	75	6,000	-	-	6,000
	Reviews and Comment Resolution		1 fte		360	360	75	27,000			27,000
	RD/RA SOW Cost							2.,000			54,000
											34,000
	RA Workplan										
	Preliminary Scoping		1 fte		160	160	75	12,000			10.00
	RD/RA Document Preparation		1 fte		260	260	75	19,500		 	12,000
	Reviews and Comment Resolution		1 fte		420	420	75	31,500			19,500
	RA Workplan Cost		, 1.0		720	720	/5	31,300			31,500
				 							63,000

Lockheed Martin Idaho Technologies Co.

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Project

WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE

WASTE SITE V-9/18 - REMOVAL, EX SITU ONSITE THERMAL TREATMENT

ALTERNATIVE 2A3 - REMOVAL EX SITU THERMAL TREATMENT

Type of Est.

PLANNING

le No. 6950-4A

Date

ACCT.	DESCRIPTION	E,V,	MAT'L	MAT'L UT.	UNIT LAB.	TOTAL	LABOR	LABOR	MATL	OTHER	TOTAL
NO.		P,H	UNIT	COST	HRS	LAB. HRS.	RATE	COST	ÇOST	COST	COST
	RA Document Preparation (cont)										
	Packaging, Shipping, Transportation Documentation										
	Sampling and Analysis		1 fte		240	240	75	18,000			18,000
	Hazard Classification		1 fte		200	200	75	15,000			15,000
	Selection and Procurement of Packaging		1 fte		200	200	75	15,000	,		15,000
··· · · · - -	Packaging, Shipping, Transportation Documentation Co	ost	· · · · · · · · · · · · · · · · · ·								48,000
	Remedial Action Report										
	RA Report Preparation		1 fte		320	320	75	24,000			24,00
	Reviews and Comment Resolution		1 fte	· •	320	320	75	24,000			24,00
	RA Report Cost										48,00
	WAG-Wide RA 5 Yr. Review - (Cost Includes (1) FTE For	(1) yr for the	Initial Review		<u> </u>					+	
	RA Report Preparation		1 yr		1,440	1,440	75	108,000			108,00
	Reviews and Comment Resolution		1 yr		440	440	75	33,000			33,00
	WAG-Wide RA 5 Yr. Reviews For 100 Years						-				141,00
	RD Document Preparation						······································				
	Safety Analysis Documentation (ASA & HSP)		<u>-</u>								
	Auditable Salety Analysis/Hazards Classification		1 fte		160	160	75	12,000			12,00
	Unresolved Safety Questions		1 fte		160	160	75	12,000			12,00
	Quality Assurance		1 fte		30	30	75	2,250			2,2
	Reviews and Comment Resolution		2 fte		335	670	75	50,250			50,25
	Safety Analysis Documentation Cost						•				76,50
	Sampling and Analysis Plan			<u> </u>						-	
	Preliminary Scoping		0.5 fte		320	160	75	12,000			12,00
	Field Sampling Plan Preparation		0.5 fte		400	200	75	15,000			15,00
	Reviews and Comment Resolution		0.5 fte		720	360	75	27,000			27,00
	Sampling and Analysis Plan Cost										54,00

Lockheed Martin Idaho Technologies Co.

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Project

WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE

WASTE SITE V-9/18 - REMOVAL, EX SITU ONSITE THERMAL TREATMENT

ALTERNATIVE 2A3 - REMOVAL EX SITU THERMAL TREATMENT

Type of Est.

PLANNING

File No. 6950-4A

Date

ACCT.	DESCRIPTION	E,V,	MAT'L	MAT'L UT.	UNIT LAB,	TOTAL	LABOR	LABOR	MAT'L	OTHER	TOTAL
NO.		P,H	UNIT	COST	HRS	LAB. HRS.	RATE	COST	COST	COST	COST
	RD Document Preparation (continued)										
	Pre-Final Inspection Report										
	Checklist Preparation		1 fte		40	40	75	3,000			3,000
	Reviews and Comment Resolution		1 fte		60	60	75	4,500			4,500
	Pre-Final Inspection Report Cost										7,500
	Remedial Design		· · · · ·							<u> </u>	
	Initial Review of Deed Restrictions with Governing Bodies a	and Public Co	nmment	l	<u> </u>					 	
	Legal Attorney and Env. Affairs at \$32K ea.	100.00	1 ea	32,000					32,000	 -	32,000
	Deed Restrictions Cost			02,000					32,000	 	32,000
						-					32,000
											·
	Title Design Construction Document Package - For Construction Subcontract										
	Remedial Design Workplan		1 fte		320	320	75	24,000			24,000
	Siting and Surveying		1 site		20	20	40	800			806
****	Procurement Document Package		45 dwgs	3,500					157,500		157,500
	Total Title Design Package							-			182,30
											· · · · · · · · · · · · · · · · · · ·
			· · · · · · · · · · · · · · · · · · ·			ļ. <u></u>					
	Site Characterization - Including: Sample Collection Materia	als/Labor, Sh	Joning SMO TOS	Preparation &	Angiveis Res	norting EBIS (Justitu Bengel	line		(Materials)	
	Assume 1 Sample Per 14 Drum Cask (1 Truckload)	1	20 smpls	1,500	6	120	75	9,000	30,000	5,000	44,000
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Project

WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE WASTE SITE V-9/18 - REMOVAL, EX SITU ONSITE THERMAL TREATMENT

ALTERNATIVE 2A3 - REMOVAL EX SITU THERMAL TREATMENT

Type of Est. PLANNING File No. 6950-4A

ACCT.	DESCRIPTION	E,V,	MATL	MAT'L UT.	UNIT LAB.	TOTAL	LABOR	LABOR	MATL	OTHER	TOTAL
NO.		P,H	UNIT	COST	HRS	LAB. HRS.	RATE	COST	COST	COST	COST
	Remedial Action - Construction Subcontract; Contaminated So	is Exca	ration, Treatment,	and On-Site D	isposal	·					
	Mobilization to Site		1 crew	·	40	40	350	14,000			14,00
	Temporary Fence and Site Prep	.	1 crew		20	20	350	7,000			7.00
	Shoring and Piling Around Tanks (25 If Deep)		260 lf	700				_	182,000		182,0
	Secondary Containment		6,000 sf	90					540,000		540,0
	Temporary Utilities: Assume Electrical Power within 250'		1 ls	20,000					20,000		20,0
	Temporary Potable 4,000 Gal. Water Truck		4 mths	4,000					16,000		16,0
	Temporary Air Compressor (185 cfm Trailer Mt'd)		4 mths	500					2,000		2,0
	Temp. Pads (polyliner sand & gravel) 50' x 50'		2 ea	5,000					10,000		10.0
	Temporary Fencing and Signage		200 lf	10					2,000		2.0
	Tank Air/Water Jet Mixing Equipment Allowance	ļ	1 ls	150,000					150,000		150,0
	Tank Vacuum/Drum Filling Equipment Allowance		1 ls	250,000					250,000		250,0
	Machine Excavate Soils		1,400 cy		0.13	182	350	63,700			63.7
	Hand Excavation Around Tanks and Piping		100 cy		2	200	80	12,000	·		12,0
	Temporary Radiation Shielding Allowance		1 ls	50,000	_				50,000		50,
	Remove Waste From Tank (Assume 5 Drum Per Day)	_	400 drums		2	800	350	280,000			280,0
	Purchase Absorbent Material (2 Truckloads)		2 ea	5000					10,000		10,0
	Cleanout Tank Interiors (Powerwash/Handwash)		2000 sf		0.05	100	350	35,000	10,000		35,
	Cut Tank For Sizing and Disposal (320'/Tank)		960 If		0.5	480	350	168,000			168,
	Transport Tank Remains to CFA Landfill		8 trip		4	32	350	11,200			11,
	Remove Exist. Underground Piping System and Box		1 crew		80	80	350	28,000			28,
	Backfill and Compact with Native Soil and Revegetate		1500 cy		0.029	44	350	15,225			15,:
	Load/Transport of Solls/Pipe Boxes To Onsite Repository		150 Trips		4	600	110	66,000			66.
	Load/Transport Waste Drums To RWMC/AMWTTF		30 Trips		10	300	110	33,000			33,0
	Decon and Remove Rad. Shielding & Secondary Structure		1 crew	5,000	160	160	350	56,000	5.000		61,0
	Cut Shoring and Pilling at Grade		260 H	150	-				39,000		39.0
	Siite Signage, Cleanup and Demob.		1 Is	2,000	30	30	350	10,500	2,000		12.5
	Total Subcontractor Directs		·							-	2,077,0
	Subcontractor Overhead and Profit @ 30%		·								623,2
	Total Subcontractor Directs and Indirects										2,700,9
	Procurement Fees and G&A at Current Business Practices										2,700,5 972,5
	Total Subcontractor Costs										
	Project/Construction Management; Contaminated Soils Excava				3,673,2 810,2						

Lockheed Martin Idaho Technologies Co.

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Project

WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE

WASTE SITE V-9/18 - REMOVAL, EX SITU ONSITE THERMAL TREATMENT

ALTERNATIVE 2A3 - REMOVAL EX SITU THERMAL TREATMENT

Type of Est.

PLANNING

ile No. 6950-4A

Date

ACCT.	DESCRIPTION	E,V,	MAT'L	MAT'L·UT.	UNIT LAB.	TOTAL .	LABOR	LABOR	MATL	OTHER	TOTAL
NO.		P,H	UNIT	COST	HRS	LAB. HRS.	RATE	cost	COST	COST	COST
	Remedial Action - Construction Subcontract; Contaminated Soil	is Exca	ation, Treatment,	and On-Site D	sposal						
											······
	PPE's Required for Project(5fte crew @ 1 per day/80 Days)		400 ea	40					16,000		16,00
	LMITCO Jobsite Support Personnel		4 ea		640	2,560	65	166,400			166,40
	LMITCO Job Walkdown and Closeout		4 fte		40	160	70	11,200			11,20
	Road Closure and Off Hours Security and Signage		1 Is	10,000					10,000		10,00
	Misc. Consumable Materials: Fuel, Power, Tools, atc.		1 Is	20,000					20,000		20,00
	4x4x8 Waste Boxes For Waste Piping		25 boxes	650					16,250		16,2
	55 Gallon Drums for Tank Contents		275 drums	150					41,250		41,25
	Shielded Transport Cask Rental for Drums Allowance		2 ea	10,000					20,000		20.00
	Sludges/Liquids to AMWTF for Treatment		1,470 cf	75					110,250		110,2
	Onsite Soil Repository Disposal Cost		1,500 cy	104					156,000		156,00
	RWMC Storage Of Treated Waste is Included in Treatment Costs										100,01
	Transport Waste To WIPP is included in Treatment Costs		,								
	Total Cost										567,39
						_					007,00
	Project/Construction Management; Contaminated Soils Excavation, Treatment, and On-Site Disposal										170,2
											170,2
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Project

WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE

WASTE SITE V-9/18 - REMOVAL, EX SITU ONSITE THERMAL TREATMENT

ALTERNATIVE 2A3 - REMOVAL EX SITU THERMAL TREATMENT

COSTS ON THIS PAGE ARE THE SAME AS COSTS ON PAGE 7 OF 8 FROM PROJECT "WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE; WASTE SITE V-9/18 - REMOVAL, EX SITU OFFSITE THERMAL TREATMENT; ALTERNATIVE 2A3 - REMOVAL EX SITU THERMAL TREATMENT

Douglass J. Kuhns, WAG 1 Project Manager

Date

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Project

WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE

WASTE SITE V-9/18 - REMOVAL, EX SITU ONSITE THERMAL TREATMENT

ALTERNATIVE 2A3 - REMOVAL EX SITU THERMAL TREATMENT

COSTS ON THIS PAGE ARE THE SAME AS COSTS ON PAGE 8 OF 8 FROM PROJECT "WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE; WASTE SITE V-9/18 - REMOVAL, EX SITU OFFSITE THERMAL

TREATMENT; ALTERNATIVE 2A3 - REMOVAL EX SITU THERMAL TREATMENT